

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ULRICH REINERS,
ERIK JARUND and
LEIF LINNE

Appeal 2006-2335
Application 09/851,460
Technology Center 1700

Decided: November 24, 2006

Before WALTZ, KRATZ, and TIMM, *Administrative Patent Judges*.
WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal from the Primary Examiner's final rejection of claims 1 through 11, 13, 14, 18, and 19. Claims 12, 15-17, and 20 are the only other claims pending in this application and stand objected to by the Examiner as dependent upon a rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims (Answer 2).¹ We have jurisdiction pursuant to 35 U.S.C. § 134.

According to Appellants, the invention is directed to a multilayer barrier film which has a paper-like appearance and is suitable for thermo-forming and sealing, particularly on form-fill-seal (FFS) machines, so that the multilayer barrier film can be easily processed into packages for perishable foods (Br. 1). Independent claim 1 is illustrative of the invention and is reproduced below:

1. A multilayer barrier film comprising a filled layer based on polypropylene and a plurality of unfilled layers, wherein the filled layer is filled with 40-75 weight %, based on the total weight of the filled layer, of an inorganic filler, forms one of the two surface layers of the film, and has a thickness of 40 µm to 400 µm, the unfilled layers comprising at least a barrier layer and sealing layer and optionally at least one adhesive layer, and the ratio of the total thickness of the unfilled layers to the thickness of the filled layer being from 1:8 to 1:1.2, wherein the sealing layer forms the other of the two surface layers of the film and the barrier layer is sandwiched between the filled layer and the sealing layer.

The Examiner has relied on the following references as evidence of obviousness:

Farrell	US 4,526,823	Jul. 02, 1985
Hattori	US 4,567,089	Jan. 28, 1986
Miyazaki	US 4,578,296	Mar. 25, 1986
Blemburg	US 5,108,844	Apr. 28, 1992
Bochow	US 5,449,552	Sep. 12, 1995
Rosen	US 5,635,011	Jun. 03, 1997

¹ We refer to and cite from the substitute Examiner's Answer dated Feb. 01, 2006.

The following rejections are on review in this appeal:

- (1) claims 1-4, 6, 7, 10, 11, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Farrell in view of Miyazaki (Answer 4);²
- (2) claim 5 stands rejected under § 103(a) over Farrell in view of Miyazaki and either Rosen (Answer 5) or Blemburg (*id.*);
- (3) claims 1, 2, 4, 6-11, 13, 14, 18, and 19 stand rejected under § 103(a) over Bochow in view of Hattori (Answer 6).³

Based on the totality of the record, we AFFIRM all grounds of rejection under review in this appeal essentially for the reasons stated in the Answer, as well as those reasons set forth below.

OPINION

A. The Rejections Based on Farrell and Miyazaki

The Examiner finds that Farrell discloses a plastic laminate sheet that comprises an outer layer of filled plastic, an inner layer of high density polyethylene (HDPE) that corresponds to the claimed “sealing layer,” and an ethylene vinyl alcohol (EVOH) barrier layer interposed between the inner

² The Examiner inadvertently omits claims 18 and 19 from the statement of the rejection on page 4 of the Answer. However, we hold this error harmless since the Examiner has stated the correct claims in the rejection on page 3 of the Answer, as well as page 2 of the Final Office Action dated Feb. 13, 2004, and Appellants have recognized the claims in this rejection (Br. 4, Ground A).

³ The Examiner also inadvertently omits claims 18 and 19 from this statement of the rejection on page 6 of the Answer. However, we hold this error harmless for the same reasons as noted in footnote 2. We also note that all rejections based on Schirmer (US 5,011,735) in the Final Office Action dated Feb. 13, 2004, have been withdrawn by the Examiner (Answer 2-3, ¶ (6); Reply Br. 2).

and outer layers (Answer 4). The Examiner further finds that Farrell teaches various adhesives to bond the layers together, the thickness of the outer layer, the use of 5 to 80% of filler in the outer layer, and that the laminate may be thermoformed (*id.*). The Examiner also finds that Farrell teaches that the thickness of each layer is not critical but fails to teach the claimed filled layer: unfilled layers thickness ratio (*id.*).

The Examiner applies Miyazaki for the teaching of the beneficial thickness ratio of the filled polyolefin resin: unfilled layers in a thermoformed laminate in order to assure that the laminate maintains the appearance of paper, as well as the touch and feel of paper (Answer 4-5). From these findings, the Examiner concludes that it would have been obvious to one of ordinary skill in this art at the time the invention was made to vary the thickness ratio of the filled layer to the unfilled layers in order to obtain the appearance, touch and feel characteristics of paper (Answer 5).

Appellants argue that neither Farrell nor Miyazaki disclose a multilayer barrier film comprising a sealing layer which forms a surface layer (Br. 12, 14). As correctly stated by the Examiner (Answer 11), Appellants' argument is not well taken since Farrell teaches a surface layer of HDPE, which is the same class of material disclosed by Appellants as their "sealing layer" (Specification 4).

Appellants argue that Farrell "teaches away" from the claimed thickness ratio since this reference teaches that the thickness of each layer is not critical, and exemplifies a maximum thickness ratio of 1:1 (Br. 12). This argument is not persuasive. A reference "teaches away" when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the Appellants' invention. *See In re Gurley*, 27 F.3d 551,

553, 31 USPQ2d 1130, 1131-32 (Fed. Cir. 1994). Here we determine that Farrell does not suggest that the thickness of any layer is unlikely to produce the objective of Appellants' invention, i.e., a thermoformed multilayer barrier film. We determine that Farrell merely teaches that "the thickness of each layer is not *per se* critical" but does not "teach away" from any thickness ratio of multiple layers (Farrell 4:62-63). We further determine that Farrell teaches that "[t]ypically" the thickness of the outer [filled] layer is about 3 to about 7 mils while the thickness of the inner [unfilled] layer is about 3 to about 7 mils (Farrell 4:63-66). However, contrary to Appellants' argument, the disclosure and Examples of Farrell are not comparative with the claimed thickness ratio since all of the disclosure and Examples found in Farrell do not disclose or teach the thickness of a barrier layer, if present (*see Examples I and II in col. 5*). Therefore, from the data given in Farrell, a thickness ratio of filled layer to unfilled layers (the sealing layer and barrier layer) cannot be determined.

Appellants argue that, as conceded by the Examiner, Miyazaki is directed only to a two layer structure of an inner and outer layer, and Miyazaki does not teach what the thickness ratio must be for a laminate of three or more layers as here claimed (Br. 13). Appellants further argue that even if Miyazaki teaches three-layer structures, this possible structure would have no paper-like appearance since filled layer A would be sandwiched between two unfilled layers B with a plastic appearance (Reply Br. 7).

Appellants' arguments are not persuasive. As our reviewing court has held:

Nor can patentability be found in the difference in carbon monoxide ranges recited in the claims. The law is replete with cases in which the difference between the claimed invention and the prior

art is some range or other variable within the claims. [Citations omitted]. These cases have consistently held that in such a situation, the applicant must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range. [Citations omitted].⁴

On this record, we find that Farrell suggests various thicknesses for the outer and inner layer of a multilayer barrier film laminate, while Miyazaki also suggests various thickness ratios for the outer and inner layers of multilayer film laminates (Miyazaki 7:33-38 and 8:5-19). Furthermore, the thickness of the barrier layer would have been well within the ordinary skill in this art, depending on the desired degree of oxygen impermeability (e.g., see Bochow 1:55-57 and 2:58). From these findings, we conclude that the determination of the thickness of each layer in the laminate of Farrell would be *prima facie* obvious to one of ordinary skill in this art, absent any showing of unexpected results. *See In re Woodruff, supra.*

Appellants argue that experimental evidence has been submitted demonstrating “the properties and advantages” of the films according to the invention (Br. 6-9). Appellants refer to data in the Specification 8-10, as well as results submitted in the two Declarations under 37 C.F.R. § 1.132 by Bernig (dated Jan. 7, 2002, and Mar. 10, 2003; Br. 6), with all data summarized in the Table at Br. 8.

Accordingly, we must begin anew and reconsider all the evidence of obviousness against the countervailing evidence of non-obviousness, determining if the preponderance of evidence weighs for or against

⁴ *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

obviousness within the meaning of 35 U.S.C. § 103(a). *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

When considering evidence of unexpected results to rebut a prima facie case of obviousness, the burden rests with Appellants to indicate why the results are unexpected, why the comparison is with the closest prior art, and why the comparison is commensurate in scope with the subject matter sought to be patented. *See In re Mayne*, 104 F.3d 1339, 1344, 41 USPQ2d 1451, 1456 (Fed. Cir. 1997); *In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972); and *Ex parte Gelles*, 22 USPQ2d 1318, 1319 (Bd. Pat. App. & Int. 1992). Although we agree with Appellants that it was impossible to keep all variables constant except one (Reply Br. 5), we determine that Appellants have not met their burden of establishing why the comparative results are commensurate in scope with the subject matter sought to be patented. *See In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). All of the multilayer film laminates tested are limited to specific fillers (e.g., calcium carbonate) with specific particle sizes (e.g., 4.5 microns), used with specific amounts of propylene homopolymer (e.g., 47 wt. %), a specific barrier layer composition, optional adhesives, and specific amounts and materials as the sealing layer (e.g., 75% polyethylene and 25% polybutylene), while the claims on appeal are not so limited. *See* the Specification 8:12-27; the first Bernig Declaration, page 2, and the second Bernig Declaration, pages 1-2. Claim 1 on appeal is not limited to any specific materials and amounts, other than the amount of “inorganic filler” and the material (polypropylene) of the filled layer. Accordingly, we determine that Appellants have not met their burden.

With regard to the rejection of claim 5, Appellants merely argue that Rosen and Blemburg do not make up for the deficiencies of Farrell and Miyazaki (Br. 15, 20). Therefore we adopt our comments from above, as well as the Examiner's findings of fact and conclusions of law with respect to Rosen and Blemburg (Answer 5-6).

Based on the totality of the record, including due consideration of Appellants' arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of § 103(a). Therefore we affirm all rejections on appeal based on Farrell in view of Miyazaki, alone or in view of Rosen or Blemburg.

B. The Rejection Based on Bochow in view of Hattori

The Examiner finds that Bochow discloses a multilayer, thermoformable composite film comprising a surface layer, an optional adhesive layer, a gas barrier layer, a second optional adhesive layer, and a heat sealable layer, where each layer may comprise materials within the scope of the claimed materials (Answer 6). The Examiner further finds that Bochow teaches the thicknesses of the individual layers, and these values would produce thickness ratios which overlap the claimed thickness ratio (Answer 6-7). The Examiner recognizes that, although Bochow teaches use of a filler, the reference is silent on the amount of filler added to the polypropylene film (Answer 7). Therefore the Examiner applies Hattori for its teaching of a thermoformable laminate with a filled polypropylene layer with advantageous properties when the filler is employed in amounts of from 5 to 60 parts by weight (pbw) (*id.*). From these findings, the Examiner concludes that it would have been obvious to one of ordinary skill in this art at the time of the invention to use from 5 to 60 pbw of filler in the filled

polypropylene layer of the laminate disclosed by Bochow to improve the heat resistance, stiffness, and dimensional stability, as taught by Hattori (*id.*).

Appellants argue that Bochow “teaches away” from the claimed invention since this reference desires “limited thermoformability” while Appellants want an “improved thermoformability” (Br. 21). This argument is not persuasive. Appellants have not established that the “limited thermoformability” taught by Bochow (1:47) differs in any substantial way from Appellants’ “improved thermoformability.” Therefore we determine that Bochow does not lead away from the objective of Appellants’ invention. *See In re Gurley, supra.* Furthermore, this property is not recited in the claims on appeal (with the exception of claims 13 and 14 discussed below).

Appellants argue that neither Bochow nor Hattori contain any guidance regarding adjusting the thickness ratio (Br. 22). This argument is not well taken since Bochow alone teaches various thickness ranges for each layer that produce thickness ratios overlapping the claimed ranges (Answer 6-7; *see* Bochow 2:54-59). Overlapping ranges creates a *prima facie* case of obviousness. *See In re Peterson*, 315 F.3d 1325, 1329-30, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003). We note that Hattori was not applied by the Examiner for any teaching of thicknesses (Answer 7).

Appellants argue that Hattori does not disclose that the unfilled layers comprise a barrier layer and a sealing layer, and there would be no reason to combine the disclosures of Bochow and Hattori since each reference has a different objective (Br. 24). These arguments are not persuasive. Both references are concerned with stiffness and some amount of thermoformability, as admitted by Appellants (Br. 24). We note that Hattori has merely been applied by the Examiner to show that one of ordinary skill

in this art would have known to use certain amounts of inorganic filler in a polypropylene film laminate to achieve desired properties (Answer 7; Hattori 4:51-56). Appellants have not alleged nor shown criticality for the amount of filler. *See In re Woodruff, supra.*

With regard to the rejection of claims 13 and 14, Appellants argue that these claims recite the formation of packaging on an FFS machine, and neither Bochow nor Hattori teach this limitation (Reply Br. 3). This argument is not persuasive. Claims 13 and 14 are drawn to a product (a packaging material) formed by a process (thermo-forming) on a FFS machine. Therefore we consider the patentability of the product in view of the prior art, not the process by which it is made. *See In re Wertheim*, 541 F.2d 257, 271, 191 USPQ 90, 103 (CCPA 1976). Furthermore, both references teach that the product has use as packaging and has some degree of thermoformability, therefore rendering obvious the use of the product in a thermoforming process on any well known machine to form packaging material. *See* Bochow 1:5-11, 47, and Hattori 1:5-23.

Appellants again argue that the comparative tests provided show unexpected results (Br. 23). However, these results are not persuasive for reasons discussed above.

Based on the totality of the record, including due consideration of Appellants' arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of § 103(a). Therefore we affirm the rejection over Bochow in view of Hattori.

C. Summary

The rejection of claims 1-4, 6, 7, 10, 11, 18, and 19 under § 103(a) over Farrell in view of Miyazaki is affirmed. The rejections of claim 5 under § 103(a) over Farrell in view of Miyazaki and either Rosen or Blemburg are affirmed. The rejection of claims 1, 2, 4, 6-11, 13, 14, 18, and 19 under § 103(a) over Bochow in view of Hattori is affirmed. Accordingly, the decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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